

Atmospheric Electricity i

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action (26), and the discharge made by platina spatulas through the tongue or the gums, the effect upon the tongue and eyes was exactly that of a momentary feeble voltaic circuit.

69. v. *Spark*.—The beautiful flash of light attending the discharge of common electricity is well known. It rivals in brilliancy, if it does not even very much surpass,, the light from the discharge of voltaic electricity; but it endures for an instant only, and is attended by a sharp noise like that of a small explosion. Still no difficulty can arise in recognising it to be the same spark as that from the voltaic battery, especially under certain circumstances. The eye cannot distinguish the difference between a voltaic and a common electricity spark, if they be taken between amalgamated surfaces of metal, at intervals only, and through the same distance of air.

70. When the Leyden battery (27) was discharged through a wet string placed in some part of the circuit away from the place where the spark was to pass, the spark was yellowish, flamy, having a duration sensibly longer than if the water had not been interposed, was about three-fourths of an inch in length, was accompanied by little or no noise, and whilst losing part of its usual character had approximated in some degree to the voltaic spark. When the electricity retarded by water was discharged between pieces of charcoal, it was exceedingly luminous and bright upon both surfaces of the charcoal, resembling the brightness of the voltaic discharge on such surfaces.

When the discharge of the unretarded electricity was taken upon »charcoal, it was bright upon both the surfaces (in that respect resembling the voltaic spark), but the noise was loud, sharp, and ringing.

71.1 have assumed, in accordance, I believe, with the opinion of every other philosopher, that atmospheric electricity is of the same nature with ordinary electricity (20), and I might therefore refer to certain published statements of chemical effects produced by the former as proofs that the latter enjoys the power of decomposition in common with voltaic electricity.

But the comparison I am drawing is far too rigorous to allow me to use these statements without being fully assured of their accuracy; yet I have no right to suppress them,

because, if
accurate, they establish what I am labouring to
put on an
undoubted foundation, and have priority to my
results.

72. M. Bonijol of Geneva ¹ is said to have
constructed very
delicate apparatus for the decomposition of water
by common

¹ *Bibliothèque Universelle*, 1830, tome xlv. p. 213.